OM Data Dictionary Update

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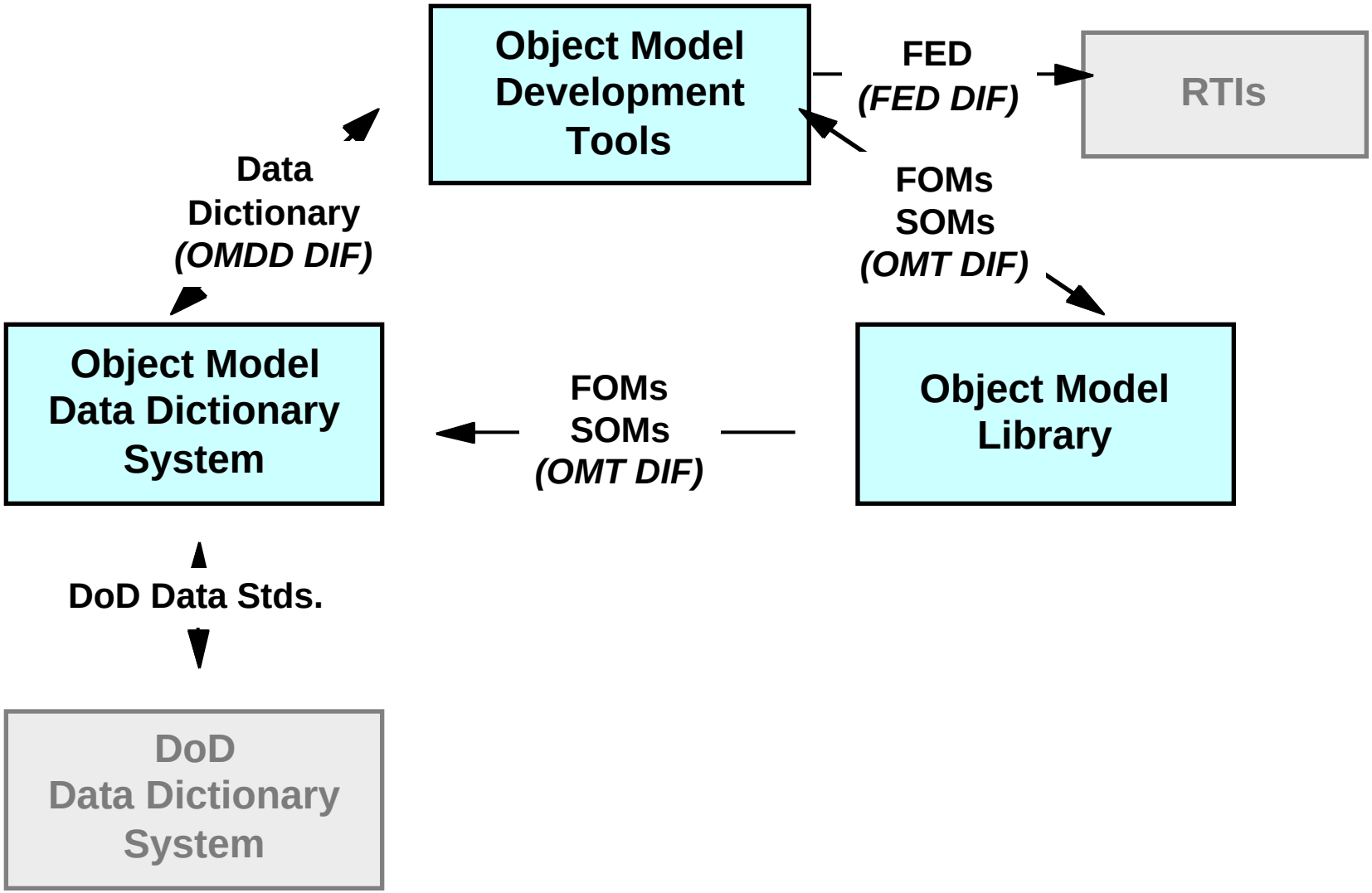
HLA Object Model
Integrated Tools Suite



OM Library Status

- **Part of the late-October OM Tools release along with the OMDT**
- **New features:**
  - **Ability to browse local file system for object models to check in**
- **Current development activities:**
  - **Streamlining the model check-in process (reusable OMT DIF software component)**
  - **Migrating to Oracle DBMS**
  - **Beginning modifications to support OMT 1.3**
- **Draft OMT DIF 1.3 completed and under review**

OM Library Population

Currently populated with:

- **CCTT SAF SOM ***
- **ModSAF FCS SOM ***
- **CTAPS SOM ***
- **Eagle SOM ***
- **NASM AP SOM ***
- **Real-time Platform Reference FOM**
- **Engineering Federation FOM**
- **Joint Training Confederation FOM**
- **NASM/AP SOM**
- **Joint Training Federation Protofederation FOM**

Additional FOMs expected soon:

- **F-14D FOM (NAWC-TSD)**
- **Countermine Component FOM (Army / NVESD)**

*** New since AMG21**

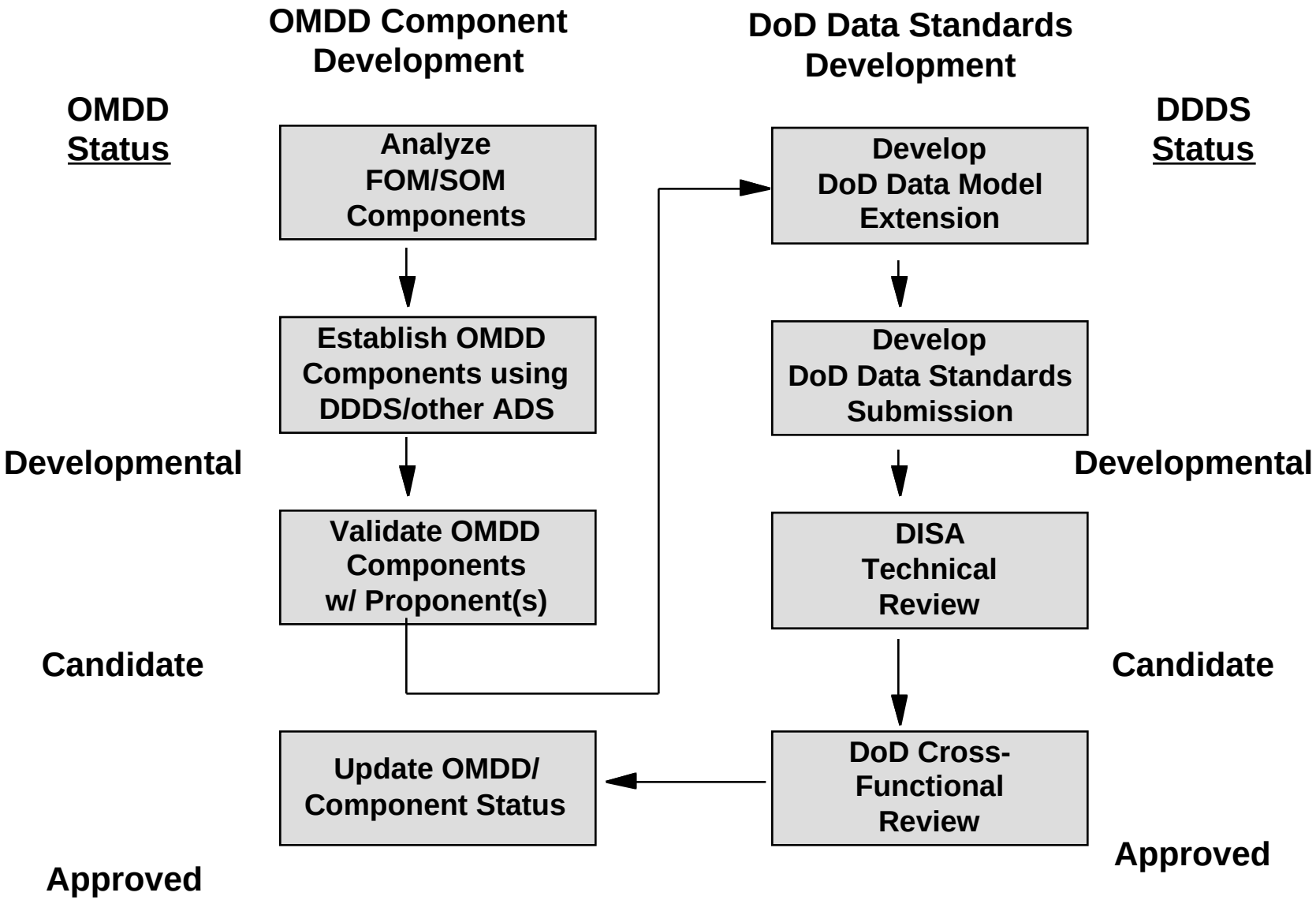
Object Model Data Dictionary System (OMDDS) Status

- **Alpha version available for AMG access:**
  - **http://s3.arlut.utexas.edu/cfdocs/index.cfm**
  - **Requires Netscape 4.0 or Internet Explorer 4.0**
- **Core functionality in the Alpha release:**
  - **Browse Object Model Data Dictionary (OMDD) components**
  - **Search OMDD components**
  - **Manage user selections of OMDD components (persistently)**
  - **Export user selected OMDD components in OMDD DIF format**
- **Functionality under development:**
  - **View mappings of OMDD contents to the OML and DDDS**
  - **Enhancements to current GUI based on OMDD Experiment Feedback**
- **Release in spring, contingent on OMDD Experiment and early user feedback**

Object Model Data Dictionary Contents

- **OMDD Elements:**
  - **Classes**
    - **names, associated terms, definitions, notes, and status**
  - **Generic elements (attributes and parameters)**
    - **names, associated terms, definitions, notes, and status**
    - **data type, units of measure (multiple representations)**
  - **Complex data types**
    - **names, fields, associated generic elements, and status**
  - **Enumerated data types**
    - **names, enumerators, representations, notes, associated terms and status**
  - **Interactions**
    - **names, associated terms, notes, and status**

OMDD Development Process



Object Model Data Dictionary Population Status

- **Initial efforts focused on population of OMDD elements based on requirements from:**
  - **Real-time Platform Reference FOM**
  - **Engineering Federation FOM**
  - **Joint Training Confederation FOM**
- **OMDD population:**

Component Type	Current	Int. Review
Object Classes	59	-
Interaction Classes	4	60
Generic Elements	151	64
Complex data types	15	8
Enumerated data types	109	-
Enumerations	10964	-

- **All OMDD components currently in Developmental status**
- **AMG programs to nominate additional FOMs/SOMs for reverse engineering to scrudder@arlut.utexas.edu**

OMDD Experiment

- **Purpose - To provide practical experience in**
  - **Use of the OMDD elements in building FOMs**
  - **Use of the OMDDS to select OMDD elements for FOM construction**
  - **Use of the OMDTs to build FOMs from OMDD elements**
- **Status**
  - **Experiment underway**
  - **OMDDS and prototype OMDT in use**
  - **Positive feedback on OMDDS / OMDT integration and usability**
  - **New GUI capabilities recommended by OMDD Experiment team**
    - **Linkage from data types to generic elements**
    - **Selection of export contents from export area**

OMDT Support for the OMDD Experiment

- **New capabilities prototyped in OMDT:**
  - **Read multiple OMDD DIF files**
  - **Copy OMDD classes into an FOM/SOM**
  - **Copy OMDD interactions into an FOM/SOM**
  - **Copy OMDD generic elements into an FOM/SOM**
    - **as attributes and/or parameters**
    - **select from multiple representations**
  - **Copy OMDD complex data types into a FOM/SOM**
  - **Copy OMDD enumerated data types into a FOM/SOM**
  - **Associated lexicons filled out as selections are made**

OMDD Experiment

Ms. Chris Bouwens, SAIC

Background

- **Explore the use of the OMDD using the OMDDS and the OMDT**
- **Examine the use of the tools in the context of several approaches to FOM development**
- **Walk through the FEDEP (1.1) and FOM development processes to provide feedback**

OMDDS

The OMDDS was used to select elements of the data dictionary and import them into the OMDT for Conceptual Model and FOM development

Results:

- **Search capability very useful in developing export data set**
- **OMDD easily navigated using browser**
- **Feedback provided on ease of use and consistency**

OMDT - OMDD Capability

- **Allows use of multiple OMDD DIF files - easy access**
- **Only shows entries that apply (only shows classes when viewing from “Class table” view)**
- **Able to build a entire FOM by bringing in elements from the OMDDS**

FOM Development Methodology

Three main approaches:

- **Bottom-up Approach**
  - **Ensures consistent data definition and offers multiple options**
  - **OMDDS vital to success of this approach**
- **Single SOM / Merge SOM**
  - **Closer to existing Federate implementation**
  - **Inconsistency in naming**
- **Reference FOM**
  - **Easier to remove rather than add - likely that different folks implementing same types of objects would develop compatible FOMs**
  - **May leave an unnaturally deep hierarchy that serves no purpose in the federation**

FEDEP Process

FEDEP Process was followed to explore where the various tools and techniques are implemented.

Results:

- **FEDEP provides up front analysis required for assembling a Federation - provides a good guide for new developers**
- **FEDEP could be improved with more information on the various tools used (what is available, where to find them, etc.). Might serve as a good addendum**

General Conclusions

- **OMDDS and OMDT provide a quick and efficient means to develop object models using the OMDD**
- **Different FOM development approaches are well supported by the tools**
- **The FEDEP process is a useful guide for new users learning about HLA and what is needed to implement**